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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference M/45007-PCT	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/EP2004/000460	International filing date (<i>day/month/year</i>) 21.01.2004	Priority date (<i>day/month/year</i>) 24.01.2003	
International Patent Classification (IPC) or national classification and IPC C25B11/02			
Applicant DE NORA ELETTRODI S.p.A.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> <i>sent to the applicant and to the International Bureau</i> a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> <i>(sent to the International Bureau only)</i> a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 21.08.2004		Date of completion of this report 12.05.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer Desbois, V Telephone No. +31 70 340-8952	



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/000460

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-12 as originally filed

Claims, Numbers

23 as originally filed

1-22 received on 24.11.2004 with letter of 24.11.2004

Drawings, Sheets

1/10-10/10 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/000460

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-21
	No: Claims	22
Inventive step (IS)	Yes: Claims	9-11
	No: Claims	1-8, 12-22
Industrial applicability (IA)	Yes: Claims	1-22
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/EP2004/000460

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following document :

D1: EP-A-0 848 085 (HERAEUS ELEKTROCHEMIE GMBH) 17 June 1998 (1998-06-17)

1. Clarity and inventive step of claim 1

1.1. The application does not meet the requirements of Article 6 PCT, because claim 1 is not clear.

The term "elastic" used in claim 1 is vague and unclear and leaves the reader in doubt as to the meaning of the technical feature to which it refers, thereby rendering the definition of the subject-matter of said claim unclear, Article 6 PCT. The meaning of the term "elastic" as understood in the present application refers to a particular design of the forcing element, such as in fig. 6, which enables the electrode assembly to compensate for minor variations of dimensions of the cell components during operation. The term "elastisch" which is used in D1, col. 2, l. 38 seems to have a different meaning. Therefore, the term "elastic" in claim 1 does not allow to distinguish the apparatus described in claim 1 of the present application from the apparatus disclosed in D1.

1.2. As claim 1 is formulated at present, the application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step

in the sense of Article 33(3) PCT.

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document):

An expandable-type anode for diaphragm chlor-alkali electrolysis cells (col. 1, l. 3-13, fig. 2a) comprising
a **conductive stem** (fig. 2a : 8),
two movable surfaces connected to said conductive stem (fig. 2a : 5a, 5b) through connecting sheets (fig. 2a : 7) and at least one **forcing elastic element** directed to adjust the gap between said movable surfaces and the diaphragm surface (fig. 2a : 12, 13, 14, 15 and fig. 2b-2f), said at least one forcing elastic element being provided with **edges having adjustable span** ("einstellbaren, mechanischen Vorspannung", col. 2, l. 36-37 ; "Verschiebung der Spreizelemente", l. 47-col. 5, l. 1)

The subject-matter of claim 1 therefore differs from this known expandable anode system in that:

The span is being adjustable by means of an extractable tool.

The problem to be solved by the present invention may therefore be regarded as finding a way to adjust the span.

The solution proposed in claim 1 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

The expandable-anode system disclosed in D1 is adjustable by moving a rail and keeping the other one fixed (Fig. 2a, 2b, col. 4, l. 47-col. 5, l. 1). In other words, a tool, or a manual action is implicitly needed to move the rail ; no tool is left behind because the adjustable mechanism is self-locking, which means that once the rails are rightly adjusted, the distance is kept fixed without the need of a tool.

2. Inventive step of claims 18, 19

In addition, the subject-matter of the corresponding independent **claims 18, 19** is also considered not inventive for the following reasons :

The anode described in document D1 is meant to belong to a diaphragm chlor-alkali electrolysis cell (col. 1, l. 3-13, fig. 2a).

Moreover document D1 discloses the process of externally regulating the gap between the movable surfaces of the anode and the corresponding diaphragm surface through the span of the edges of the forcing elastic element before at least one cell is put in operation (col. 4, l. 18-26).

3. Novelty of claim 22

In claim 22, the anode is described with reference to the drawings, which is not allowable, as it does not comply with rule 6.2(a) PCT.

Furthermore, an expandable anode for diaphragm chlor-alkali electrolysis cells is already disclosed in D1 (see abstract) ; the subject-matter of claim 22 is thus not new in the sense of Article 33(2) PCT, and therefore the criteria of Article 33(1) PCT are not met.

4. Dependent claims

4.1 Dependent claims 2-8, 12-17, 20, 21 do not contain any features which, in

combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, see document D1 and the corresponding passages cited in the search report.

4.2 The combination of the features of dependent claim 9 is neither known from, nor rendered obvious by the available prior art.

Re Item VIII.

1. Clarity of claim 1

The application does not meet the requirements of Article 6 PCT, because claim 1 is not clear.

1.1 The term "elastic" used in claim 1 is vague and unclear (see Item V., 1.1)

1.2 As explained below, the feature "by means of an extractable tool" in the apparatus claim 1 relate to a method of using the apparatus, namely of adjusting the span of the forcing elastic element, rather than clearly defining the apparatus in terms of its technical features. The intended limitations are therefore not clear from this claim, contrary to the requirements of Article 6 PCT.

1.3 The features of the claims, in particular of claim 1, are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).